



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,254	09/10/2003	Gwo-Bin Lee	LEEG3002/EM	4002
23364	7590	10/18/2005	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			MOONEY, MICHAEL P	
			ART UNIT	PAPER NUMBER
			2883	

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/658,254

Applicant(s)

LEE, GWO-BIN

Examiner

Michael P. Mooney

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 21-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

The election of claims 1-20 without traverse is acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shipwash (US PG PUB 20040005582).

Shipwash teaches an integrated analytical biochip (e.g., fig. 3) comprising: a micro reaction tank (paragraphs 0326-0327) for containing samples for proceeding to PCR reaction (paragraphs 0312-0321); plurality of micro channels (fig. 3) for separating samples (Abstract, fig. 3).

Although Shipwash does not expressly state the phrase "cloned samples" it would have been obvious to do so because Shipwash teaches cloning (e.g., paragraph 0310) and it is conventional to separate cloned samples in the type of system such as fig. 3 of Shipwash. One of ordinary skill would have been motivated separate cloned

Art Unit: 2883

samples in the type of system such as fig. 3 of Shipwash for the purpose of testing, e.g., DNA samples. (paragraph 0310; fig. 3)

Furthermore Shipwash teaches a set of optic fiber structures (fig. 3 nos. 12, 13) for detecting signals of samples. (E.g., fig. 3; Abstract; paragraph 0333, 0276).

Thus claim 1 is rejected.

Shipwash teaches wherein variations of temperature in said micro reaction tank is controlled by an IC controller (e.g., paragraphs 0018, 0312-0318). Thus claim 2 is rejected.

Shipwash teaches wherein said micro reaction tank comprises a micro heater for heating samples, and a micro temperature detector for detecting the temperature of samples in said micro reaction tank (e.g., paragraphs 0018 0312-0318). Thus claim 3 is rejected.

Shipwash teaches wherein said micro heater and said micro temperature detector are formed by an electrical resistance layer (e.g., paragraphs 0018 0312-0318). Thus claim 4 is rejected.

Although Shipwash does not explicitly state "wherein said electrical resistance layer is made of Pt/Cr or Pt/Ti" it would have been obvious to do so because it is conventional to use micro heaters and temperature detectors that are formed by electrical resistance layer is made of Pt/Cr or Pt/Ti. One of ordinary skill would have been motivated to use micro heaters and temperature detectors that are formed by electrical resistance layer is made of Pt/Cr or Pt/Ti for the purpose of conforming to art

established principles which produce successfully working devices. (e.g., paragraphs 0018 0312-0318). Thus claim 5 is rejected.

Although Shipwash does not explicitly state "micro reaction tank further comprises an insulating layer for insulating samples from said micro heater and said micro temperature detector to avoid short circuitry, and a conductive layer for electrical connection" it would have been obvious to do so because it is conventional to insulate tanks/reservoirs/chambers from said micro heater and said micro temperature detector to avoid short circuitry and to provide and a conductive layer for electrical connection.

One of ordinary skill would have been motivated to insulate tank reservoirs/chambers from said micro heater and said micro temperature detector to avoid short circuitry and one further would have been motivated to provide and a conductive layer for electrical connection for the purpose of providing a dependable working device. (e.g., See Shipwash paragraph 0234). Thus claim 6 is rejected.

By the reasons and references given above each and every element of each of claims 7-9 is rendered obvious by Shipwash and conventional principles in the art. Thus claims 7-9 are rejected.

Regarding claim 10, it is conventional in the art to provide a system wherein the IC controller comprises a filter for filtering signals outputted from said micro temperature detector so as to lower the value of noise and increase the signal/noise (S/N) ratio, an analog/digital converter (ADC) for converting analog signals to digital signals, and a pulse width modulator (PWM) for reading temperature signals so as to modulate the pulse width of the power source for said micro heater so as to control the temperature.

Art Unit: 2883

One of ordinary skill would have been motivated to provide a system wherein the IC controller comprises a filter for filtering signals outputted from said micro temperature detector so as to lower the value of noise and increase the signal/noise (S/N) ratio, an analog/digital converter (ADC) for converting analog signals to digital signals, and a pulse width modulator (PWM) for reading temperature signals so as to modulate the pulse width of the power source for said micro heater so as to control the temperature for the purpose optimizing system characteristics (e.g., paragraphs 0018, 0312-0318). Thus claim 10 is rejected.

Each and every element of each of claims 12-20 is rendered by the reasons and references given above and conventional principles in the art. Thus claims 12-20 are rejected.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Mooney whose telephone number is 571-272-2422. The examiner can normally be reached during weekdays, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2883

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1562.


Michael P. Mooney
Examiner
Art Unit 2883


Frank G. Font
Supervisory Patent Examiner
Art Unit 2883

FGF/mpm
10/14/05